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			U.S. PATENT DOCU	MENTS	
xaminer	Cite No.1	U.S. Patent Document  Kind Code <sup>2</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
M	A	5,143,828	Akkara et al.	09-01-1992	
	В	5,253,100	Yang et al.	10-12-1993	
$\Box$	С	5,370,825	Angelopoulos et al.	12-06-1994	·
$\Box$	D	5,420,237	Zemel et al.	05-30-1998	
	E	5,489,400	Liu et al.	02-06-1996	
	F	5,994,498	Tripathy et al.	11-30-1999	
	G	6,018,018	Samuelsen et al.	01-25-2000	
17	н	6,150,491	Akkara	11-21-2000	
<b>W</b>	I	6,569,651	Samuelson et al.	05-27-2003	

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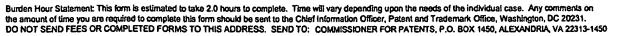
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	OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS								
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Ø	J	Tzou, K. and Gregory, R.V., "A method to prepare soluble polyaniline salt solutions - in situ doping of PANI base with organic dopants in polar solvents," Synthetic Metals, 53:365-377 (1993).							
Ì	к	Nguyen, M.T., et al., "Synthesis and properties of novel water-soluble conducting polyaniline copolymers," Macromolecules, 27:3625-3631 (1994).							
	L	Shannon, K. and Fernandez, J.E., "Preparation and properties of watersoluble, poly(styrenesulfonic acid) -doped polyaniline," J. Chem. Soc., Chem. Comm., 643-644 (1994).							
	м	Tanaka, K., et al., "Doping effect of C60 on soluble polyaniline," Synthetic Metals, 66:193-196 (1994).							
	N	Ferreira, M., et al., "Molecular self-assembly of conjugated polyions: a new process for fabricating multilayer thin film heterostructures," Thin Solid Films, 244:806-809 (1994).							
	0	Ng, S.C., et al., "Poly(o-aminobenzylphosphonic acid): a novel water soluble, self-doped functionalized polyaniline," J. Chem. Soc., Chem. Commun., 1327-1328 (1995).							
	P	Chen, S. and Hwang, G., "Synthesis of water-soluble self-acid-doped polyaniline," J. Am. Chem. Soc., 116:7939-7940 (1994).							
	Q	Chen, S. and Hwang, G., "Water-soluble self-acid-doped conducting polyaniline: structure and properties," J. Am. Chem. Soc., 117:10055- 10062 (1995).							
	R	Chan, H.S.O., et al., "A new water-soluble, self-doping conducting polyaniline from poly(o-aminobenzylphosphonic acid) and its sodium salts: synthesis and characterization," J. Am. Chem. Soc., 117:8517-8523 (1995).							
	s	Dordick, J.S., et al., "Peroxidases depolymerize lignin in organic media but not in water," Proc. Natl. Acad. Sci. USA, 83:6255-6257 (1986).							
100	т	Dordick, J.S., et al., "Polymerization of phenols catalyzed by peroxidase in nonaqueous media," Biotechnology and Bioengineering, 30:31-36 (1987).							
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<sup>1</sup> Unique citation designation number. 2 Applicant is to place a check mark here if English language Translation is attached.



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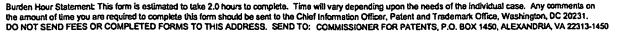
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000	ט	Kazandjian, R. Z., et al., "Enzymatic analyses in organic solvents," Biotechnology and Bioengineering, 28:417-421 (1986).	
1	v	Klibanov, A.M. et al., "Enzymatic removal of toxic phenols and anilines from waste waters," J. Appl. Biochern., 2:414-421 (1980).	
	W	Sakaki, J., et al., "Lipase-catalyzed asymmetric synthesis of 6-(3-chloro-2-hydroxpropyl) -1, 3-dioxin-4-ones and their conversion to chiral 5,6-epoxyhexanoates," Tetrahedron: Asymmetry, 2:343-346 (1991).	
	х	Ikeda, R., et al., "Novel synthetic pathway to a poly (phenylene oxide) . Laccase-catalyzed oxidative polymerization of syringic acid," Macromolecules, 29: 3053-3054 (1996).	
	Y	Akkara, J.A., et al., "Synthesis and characterization of polymers produced by horseradish peroxidase in dioxane," J. Polymer Sci.: Part A: Polymer Chemistry, 29:1561-1574 (1991).	
	z	Klibanov, A.M. and Morris, E.D., "Horseradish peroxidase for the removal of carcinogenic aromatic amines from water," Enzyme Microb. Technol., 3:119-122 (1981).	
	AA	Ayyagari, M.S., et al., "Controlled free-radical polymerization of phenol derivatives by enzyme-catalyzed reactions in organic solvents," Macromolecules, 28:5192-5197 (1995).	
	АВ	Bruno, F.F., et al., "Enzymatic mediated synthesis of conjugated polymers at the Langmuir trough air-water interface," Lanymuir, 11:889-892 (1995).	
	AC	Lapkowski, M., "Electrochemical synthesis of linear polyaniline in aqueous solutions," Synthetic Metals, 35:169-182 (1990).	
	AD	March, J., in Advanced Organic Chemistry - Reactions, Mechanisms, and Structure (NY: Magraw-Hill Company), pp.667, 668 (1977).	
T T	AE	Shinohara, H., et al., "Enzyme microsensor for glucose with an electrochemically synthesized enzyme-polyaniline film," Sensors and Actuators, 13:79-86 (1988).	

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<sup>1</sup> Unique citation designation number. 2 Applicant is to place a check mark here if English language Translation is attached.



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The same	AF	Alva, K.S., et al., "Biochemical synthesis of water soluble polyanilines: poly(p-aminobenzoic acid)," Macromol. Rapid Comm., 17:859863 (1996).					
1	AG	Liao. Y., and Levon, K., "Solubilization of polyaniline in water by interpolymer complexation," Macromol. Rapid Commun., 16: 393-397 (1995).					
	АН	Excerpts from "Plastics Engineering: Plastics - Saving Planet Earth," Volume LIII, Number 3 - (Toronto; March, 1997).					
	AI	Westerweele, E., et al., "'Inverted' Polmer Light-Emitting Diodes on Cylindrical Metal Substrates," Advanced Materials, 7(9):788-790 (1995).					
	AJ	Ryu, K., et al., "Peroxidase-Catalyzed Polymerization of Phenols: Kinetics of p-Cresol Oxidation in Organic Media," American Chemical Society Symp. Ser., 389:141-157 (1989).					
AF		Alva, K.S., et al., "Novel Immobilization Techniques in the Fabrication of Efficient Electrochemical Biosensors," SPIE, 2716: 152-163 (1996).					
AL		Genies, E.M., et al., "A rechargeable battery of the type polyaniline/propylene carbonate -LiC104/Li-Al," Journal of Applied Electrochemistry 18:751-756 (1988).					
MA		Samuelson, L.A., et al., "Biologically Derived Conducting and Water Soluble Polyaniline," Macromolecules 31:4376-4378 (1998).					
	AN	Liu, W., et al., "Enzymatically Synthesized Conducting PolLyaniline," J. Am. Chem. Soc. 121:71-78 (1999).					
	AO	Zhang, Q.M., et al., "Enzymatic Template Synthesis of Polyphenol," Materials Research Society 600:255-259 (2000).					
, OX	АР	Akkara, J.A., et al., "Hematin-Catalyzed Polymerization of Phenol Compounds," Macromolecules 33:2377-2382 (2000).					

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W	ΑQ	Dordick, J. S., "Enzymatic catalysis in monophasic organic solvents," 1 Eynzyme Microbial Technology 11: 194-211 (1989).						
Dunford, H.B., "Horseradish Peroxidase: Structure and Kinetic ji.  AR Properties," In Peroxidases in Chemistry and Biology Vol. II, J.  Everse, et al., eds (FL: CRC Press, Inc.), Pp 2-17 (1991).								
	AS	Wudl, F., et al., "Poly(p-phenyleneamineimine): Synthesis and arison to Polyaniline" J. Am. Chern. Soc. 109:3677-3684 (1987).						
*	ΑT	Stafström, S., et al., "Polaron Lattice in Highly Conducting Polyaniline: Theoretical and Optical Studies," The American Physical Society 59:1464-1467 (1987).						
	AU	Shacklette, L.W., et al., "EMI Shielding of Intrinsically Conductive Polymers, "In Search of Excellence by Society of Plastic Engineers and Plastics Engineering 665-667 (1991).						
W.	ΑV	Przybycien et al. "Electrochemical separation utilizing metalloporphyrins and metallophthalocyanines", 1998, Chem Abstract 128: 162418.						
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